



NATIONAL ENERGY TECHNOLOGY LABORATORY



# World CO<sub>2</sub> Emissions - Projected Trends *Documentation*

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# **WORLD CO<sub>2</sub> EMISSIONS - PROJECTED TRENDS DOCUMENTATION**

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# World CO<sub>2</sub> Emissions – Projected Trends Tool Documentation

## Introduction to the Tool

The *World CO<sub>2</sub> Emissions - Projected Trends* interactive tool enables the user to look at both total and power sector CO<sub>2</sub> emissions from the use of coal, oil, or natural gas, over the period 1990 to 2030. One can use the tool to compare five of the larger CO<sub>2</sub> emitters to each other or to overall world emissions. The data are from the IEA's World Energy Outlook 2008 Reference Scenario. IEA uses a scenario approach that examines future energy trends for their projections. The projections are derived from the World Energy Model (WEM), a large-scale mathematical model. The Reference Scenario generates the core projections that baseline what would happen if there were no new energy-policy interventions by governments beyond those already adopted by mid-2008. One can use the baseline data to test alternative assumptions about future government policies.<sup>1</sup>

## Using the Tool

### Selecting a Country or Region

Select a country or region in the *Source* box and click on the *Add* button to move the selection to the *Destination* box. An alternative to using the *Add* button is to double click on the selection. The selections in the *Destination* box can be reordered by dragging them up or down. The order of the selections in the *Destination* box is the order in which they will be graphed. Press the *Update* button to graph the selections in the *Destination* box. To remove a selection from the *Destination* box, select the entry and click on the *Remove* button (or just double click on the selection). Then click on the *Update* button to re-graph. Note that you must click on the *Update* button anytime you make changes to the *Destination* box in order for you graph to update.

### Coal, Oil, Gas Toggle Buttons (CO<sub>2</sub> Source)

The three fossil fuel CO<sub>2</sub> sources that can be examined are coal, oil, or natural gas. Select one of the three from the *Coal, Oil, Gas* toggle button bar on the right. These buttons will instantly update the graph; there is no need to click on the *Update* button to view these selections.

### Total and Power Toggle Buttons

The *Total* button shows the total CO<sub>2</sub> emitted from the selected CO<sub>2</sub> source. The *Total* is not the sum for all CO<sub>2</sub> sources, just the total of all sectors for the selected CO<sub>2</sub> source. For example, if the *Oil* and *Total* buttons were selected for the United States, the graph would show the total CO<sub>2</sub> emitted from oil for all sectors (power, transportation, Industry, and other sectors) in the United States. The *Power* toggle button is for power generation from the selected CO<sub>2</sub> source. Note that the graph title will tell you your selections for the CO<sub>2</sub> source and the type (Total or Power). For the above Total/Oil example, the graph title would read, "Total CO<sub>2</sub> Emissions from Oil." The *Total* and *Power* buttons will instantly update the graph; there is no need to click on the *Update* button to view these selections.

### Y-Axis Selections

The Y-axis for the graph can be fixed or can adjust automatically to maximize the visual graph heights. The fixed Y-axis is fixed to 20,000 million tonnes. This is the setting for the *Total World* CO<sub>2</sub> emissions from *Coal*; the largest of all regions and CO<sub>2</sub> sources. The fixed Y-axis can be used to maintain the World CO<sub>2</sub> emission scale and used for comparison purposes.

**Units**

Mt = million tonnes. The CO<sub>2</sub> emissions are in millions of tonnes. A tonne (a metric ton) is equal to 1,000 kg or 2,204.6 pounds or 1.1 tons (short).

**European Union**

The European Union consists of the following 27 independent sovereign states:

Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

**Data Source and Reference**

<sup>1</sup> IEA (International Energy Agency) (2008), World Energy Outlook 2008, OECD/IEA, Paris.  
<http://www.worldenergyoutlook.org/>